

REMARKS - GENERAL

1. The Applicant is NOT an Attorney.
2. A few changes have been made to the specifications to correct Grammatical mistakes and make the use of the terms “acute” and “obtuse” more clear.
3. The claims of record have been rewritten in order to define the invention more particularly and distinctly to overcome the cited objections and define the invention patentable over the cited references. Specifically, **Claim 1** has been modified to read over the prior art. **Claim 4** has been amended to correct a grammatical error. **Claims 11 and 12** have been amended to read onto **Claim 1** instead of **Claim 10**.
4. New **Claims 13-20** have been added
Claim 13 adds the limitation of specific pivot joint friction. Independent **claim 14** uses alternate wording for the amended version of **Claim 1** and its limitations. **Claims 15-16 and 19-20** are copies from Dependent **Claims 2-3 and 11-12**, respectfully. **Claim 17** includes the limitation of proper pivot axis orientation. **Claim 18** is a rewording of **Claim 13**.

RESPONSE TO FIRST OFFICE ACTION UNDER SECTION 103

5. **The Rejection Of Independent Claim 1 from combining of Berfield et al. (5,079,796) and Ragner (5,502,870) is overcome.**

The O.A. rejected independent Claim 1 with the combination of Berfield and Ragner. Claim 1 has been rewritten to be patentable over these references, and any combination thereof. The Applicant(s) request reconsideration of this rejection, in light of these changes to Claim 1, for the following reasons:

(1) The limitation of “said pivot means is oriented with respect to said upper and lower housing for providing useful operation of both the first vacuum cleaner tool when the vacuum hose wand is connected to said second hose wand port and the second vacuum cleaner tool when the vacuum hose wand is connected to said first hose wand port” in **Independent Claim 1**, and the limitation “said pivot means is designed for useful operation of said first vacuum cleaner tool when the vacuum hose wand is connected to said second hose wand port, and wherein said pivot means is designed for useful operation of said second vacuum cleaner tool when the vacuum hose wand is connected to said first hose wand port” for **Independent Claim 14**, define the pivot joint to operate in both directions with a tool at each end, not just in a single direction as prior art shows. This double orientation operation of the pivot joint is in addition to the dual direction operation of the “continuous suction passageway”, which also operates in both directions of the pivot nozzle body. Neither Ragner nor Berfield show a pivot joint (pivot means) that is designed to allow operation of a tool attached to either end of the pivot nozzle body. The simple insertion of a “one-way” pivot joint such as disclosed by Berfield does not guarantee that the pivot joint will operate properly for tool(s) placed on the opposite end of the pivot body, nor for multi-function tools placed on the original tool end 12 of Berfield.

For example, the pivot body seen in Figs. 5 and 12 of Berfield can be modified with a pair of pivot arms on end 12 and a dust brush on the end with retainer 40 and 60. With these modifications this contrived nozzle would operate properly in floor mode (arms pivoted apart) because Berfield’s pivot joint is designed for operation with a floor tool. However, neither the dust brush nor the arms in crevice tool mode (arms pivoted together) will operate properly because of reduced pivot joint friction. Also because of the angle of the pivot joint is designed only for floor tool operation, its pivot axis is not optimize for operation of the other tool functions. For example, the dust brush on the end of the hose wand port (see retainer 40 and 60) would point in an inconvenient angle with the hose wand inserted in end 12, making dusting of

surfaces difficult because of the strange orientation of the dustbrush with respect to the floor tool end. This is not surprising since Berfield's nozzle was never designed to operate in this reverse direction. Similarly, with both pivot arms together in crevice tool mode on end 12, the angle is reasonable, but the lack of friction in the pivot joint (Berfield shows special methods for reducing pivot joint friction) and the extended nature of the pivot arms perpendicular to the pivot joint would make the crevice tool nearly inoperable, or at least, frustrating as it would flop around during use. This lack of pivot joint friction would also greatly frustrate the use of the dust brush.

Neither Ragner nor Barfield could anticipate these requirements without first realizing that the pivot joint must be operable in both directions of the pivot body for the tools attached their. There is no known example of a pivot joint designed to provide operation in both directions to tools on each end. Thus, Barfield cannot be logically combined with Ragner to create an effective multi-function tool with a pivot joint without first realizing that the pivot joint must operate in both directions, which is not shown in prior art.

- (2) There is no justification for combining Berfield and Ragner or any other prior art other than from the Applicants' disclosure, much less combined in the manner proposed by the Applicant to provide pivot action in both directions on the nozzle body. Only the Applicant suggests that a **pivot joint for a nozzle body** can be combined with nozzles on both ends of a pivotal nozzle body. Prior art examples are only designed for a single orientation of use and would by only pure chance result in the proper operation of all the multiple tools and functions for the Applicant's Pivot nozzle body if incorporated unchanged into Ragner (870). In contrast the Applicant's pivot joint must be properly designed to take into account twelve or more nozzle functions, and properly determine a pivot axis orientation for both the upper and lower housing, and determine the amount of pivotal friction needed to allow all the nozzle functions to operate properly. While a specific prior art pivot joint may exist that could provide such a combination of nozzle tools functions (though none are

known at this time), this would be by pure chance since prior art pivot joints never had to take into account such constraints. Further, if a different combination of nozzle tools is used, the previously selected prior art pivot joint may no longer be appropriate to provide proper function for the new nozzle tools design, requiring a new random selection of prior art to find a new accidental example of a pivot joint that would provide the desired properties to make the Applicants design workable. These prior arts would never suggest such a use of their pivot joint because their pivot joint is designed for a specific nozzle on a single end. Adapting the pivot joint for two-end operation is only suggested by the Applicant.

In line with this discussion, recently the Board stated in Ex parte Levengood, 28 U.S.P.Q. 2d 1300 (P.T.O.B.A.&I.1993):

“In order to establish a *prima facie* case of obviousness, it is necessary for the examiner to present *evidence* or inference in the applied prior art, or in the form of generally available knowledge, that one having ordinary skill in the art *would have been led* to combine the relevant teachings of the applied references in the proposed manner to arrive at the claimed invention. . . . That which is within the capabilities of one skilled in the art is not synonymous with obviousness. . . . That one can *reconstruct* and/or explain the theoretical mechanism of an invention by means of logic and sound scientific reasoning does not afford the basis for an obviousness conclusion unless that logic and reasoning also supplies sufficient impetus to have led one of ordinary skill in the art to combine the teachings of the references to make the claimed invention. . . . Our reviewing courts have often advised the Patent and trademark Office that it can satisfy the burden of establishing a *prima facie* case of obviousness only by showing some objective teaching in either the prior art, or knowledge generally available to one of ordinary skill in the art, that ‘would lead’ that individual ‘to combine the relevant teachings of the reference.’ . . . **Accordingly, an examiner cannot establish obviousness by locating references which describe various aspects of a patent application’s invention without also providing evidence of the motivating force which would impel one skilled in the art to do what the patent applicant has done.**” [emphasis added]

(3) Both multi-function tools that operates in both directions (i.e. Lofgren US 2,815,525 filed 1954) and pivot joints (i.e. Spencer US 1,104,148 filed 1907) have existed for vacuum cleaners conduits for over fifty years. In this half century of time there has been no suggestion (other than the Applicant) that incorporating a pivot axis on a multi-function tool would be workable or advantageous. This is in spite of the fact that the Applicant’s pivot joint would allow many new additional tool functions not seen before and with little

or no additional increase in size or weight over prior art multi-function nozzle. Surely, if such a combination were obvious, someone skilled in the art would have combined them to take advantage of the multiplicity of added functions and increased utility of existing functions during this fifty year period. For example, multi-function nozzles such as, Ragner US 5,502,870, Fahlen US 4,897,894, House US 3,108,311, Kemnitz US 2,960,716 and Lofgren US 2,815,525, have never been able to provide FULL floor tool function because of the lack of a pivot joint (a recognized benefit for floor tools, i.e. Spencer US 1,104,148). If such a combination with a pivot joint were obvious, it is logical to assume it would have been suggested by prior art at some time during this fifty year period, but it was not. **Thus, the Applicant submits that the disclosed combination of Ragner and Berfield, as well as combination with other pivot joints, is not obvious because of the fifty year period of time without prior art suggesting such a combination to take advantage of the multiple advantages and MULTIPLE ADDED FUNCTIONS produced by the Applicants pivotal nozzle body design.**

(4) There is no justification to combine Berfield and Ragner, since Berfield's pivot joint was never intended to operate in both directions, and has no need to operate in both directions without the suggestion of the Applicant's design.

(5) The addition of a carefully designed pivot joint to a multi-function nozzle provides much more than simple allowing the tool ends to rotate and change orientation with each other. Instead, the applicant's pivot joint also adds cleaning nozzle functions that did not exist in either nozzle end before the addition of the pivot joint. For example, for the Five-function Vacuum Cleaner Nozzle by Ragner (870) provides crevice tool function (Fig. 2), an upholstery tool function (Fig. 3), and a corner cleaning function (Fig. 6). With the addition of a pivot joint as disclosed by the Applicant (Ragner 10/725,753), the original pivot arm tool functions remain, but now also provide: **A)** a true floor tool function (pivot to get under furniture - see Fig. 2, 4, and 6), **B)** a ceiling fan blade cleaning tool function and other two sided edge cleaning where orienting the angle of the pivot is needed to allow proper orientation to be obtained easily by the user (arms almost together and pivot joint angled to slide over edge of fan blade - similar to orientation and position shown in Fig. 7),

C) a high shelf cleaning function (arms pivoted apart and pivot joint angled (see Fig. 5), **D**) high surface cleaning with dust brush similar to high-shelf cleaning function (see nozzle orientation in Fig. 5, but with hose wand 20 inserted in port 136), **E**) wall cleaning function and other oddly orientated surfaces (see hose wand positions 20a, 20b and 20c in Figs. 7 and 8), **F**) crevice tool function at extreme angles (see pivot joint angle in Figs. 2, 4, and 5 with arms 60 and 160, respectfully, pivoted together to form a crevice tool). This is a new and unusual result to have so many new functions to exist simply by adding a pivot joint and certainly would have been done if anticipated by prior art.

The need for the prior art references themselves to suggest that they can be combined is well-known. E.g., as was stated in *In re Sernaker*, 217 U.S.P.Q. 1, 6 (CAFC 1983):

"[P]rior art references in combination do not make an invention obvious unless something in the prior art references would suggest the advantage to be derived from combining their teaching."

(6) Prior art of record such as Ragner (974), Berfield et al, Ahlf et al, Dahl, and Spenser all have similar problems when trying to combine their pivot joint with a multi-function nozzle for two-way operation. This is because their pivot joints are designed for operation with a vacuum tool on one end and a hose wand port on the other end, and not the other way around. The addition of a second nozzle and second hose port on opposite ends places additional constraints on the pivot joint, which prior art neither suggested, nor could anticipate without the Applicants invention.

(7) Prior art of record such as Ragner (870), Fahren, House, Kemnitz, Lofgren, and Hallock, show multi-function nozzles with two-way operation, but the simple addition of a pivot joint to their nozzle body without consideration of the operation of all tools functions on both ends can easily undermine the operation of one or more of the tool functions. For example, a pivot joint placed on Hallock can easily make the two-way tool unstable for use as a hose wand making cleaning very difficult. With Lofgren, House, Fahren, and Ragner (870), indiscriminate placement, orientation and/or friction value for a pivot joint can cause one or more of the tool functions to become unstable and difficult for the user to operate.

With Kemnitz there does not appear to be any straight forward way to incorporate a pivot joint into the crossing hose ports 38 and 44.

(8) In the present case, there is no good reason given in the O.A. to support the proposed combination, other than the *Applicants claims*. No *suggestion/motivation* statement other than the **Applicants' application**, is given to justify the combination of Ragner (870) and Berfield, or Ragner(870) and Dahl. The mere fact that they can be combined, is not a logical, or obvious reason for combining these two arts to produce the multiplicity of new functions, and an **unusual** increase in the number of uses for the Applicant's design compared to the prior art examples taken separately.

6. The Rejection Of Independent Claim 1 from combining of Dahl (2,170,963) and Ragner (5,502,870) is overcome.

The O.A. rejected independent Claims 1 with the combination of Dahl and Ragner. Claim 1 has been rewritten to be patentable over these references, and any combination there of. The Applicant(s) request reconsideration of this rejection, in light of these changes to Claim 1, for the following reasons:

- (1) As with prior art from Berfield, the limitation of “said pivot means is oriented with respect to said upper and lower housing for providing useful operation of both the first vacuum cleaner tool when the vacuum hose wand is connected to said second hose wand port and the second vacuum cleaner tool when the vacuum hose wand is connected to said first hose wand port” in **Independent Claim 1**, and the limitation “said pivot means is designed for useful operation of said first vacuum cleaner tool when the vacuum hose wand is connected to said second hose wand port, and wherein said pivot means is designed for useful operation of said second vacuum cleaner tool when the vacuum hose wand is connected to said first hose wand port” for **Independent Claim 14**, define the pivot joint to operate in both directions with a tool at each end, not just in a single direction as prior art shows. This double orientation operation of the pivot joint is in addition to the dual direction operation of the “continuous suction passageway”, which also operates in both directions of the

pivot nozzle body. Neither Ragner nor Dahl show a pivot joint (pivot means) that is designed to allow operation of a tool attached to either end of the pivot nozzle body. The simple insertion of a one-way pivot joint such as disclosed by Dahl does not guarantee that the pivot joint will operate properly for all the tool functions place on the hose wand port end 11 Dahl's pivot body.

For example, the pivot body seen in Figs. 2 through 6 of Dahl can be modified with a pair of pivot arms on the end of housing 24. and a dust brush and a second hose wand port created on end 11. With these modifications this contrived nozzle would no longer operate properly in floor mode (arms pivoted apart), because of the double axis of rotation of Dahl's pivot joint (arms could pivot forward and backward as the user pushed and pulled the on the hose wand, respectfully), would disengage the arms from proper cleaning contact with the surface. This is not a problem for the original design by Dahl, because the wide triangular base is able to keep the nozzle head stable. Such a wide triangular base is not an option for the Applicant's design unless several functions are omitted. Similarly, if the positions of the pivot arms and the dust brush were switched, the new contrived nozzle would still not work as a floor tool because of the double axis pivot joint again would allow the arms to pivot. In crevice tool mode Dahl's pivot joint may or may not work properly depending on the friction integrated into the joint. Dahl cannot suggest a pivot joint friction for a crevice tool function, since such a suggestion is only offered by the Applicant. Such friction is contrary to Dahl's device's purposes as he states "guide member 20 is free to rotate about axis 17 and pin 18" (see lines 45-50 of column 2). As with other floor tool designs, Dahl has designed his pivot joint to be "free to rotate about axis 17 and pin 18". This is an advantage for floor tools, since it allows easier adjusting of the tool's cleaning surface to the floor. However, neither the dust brush nor the arms in crevice tool mode (arms pivoted together) will operate properly with such a pivot joint on the Applicant's design, because of this reduced pivot joint friction. For example, the dust brush on the end of the hose wand port (see end 11) would simply rotate and flop around along two axis because of the low friction, making dusting surfaces nearly impossible. This is not surprising since Dahl's nozzle was never

designed to operate in this reverse direction, or with a dust brush. Similarly, with pivot arms together in crevice tool mode on end 24, the lack of friction in Dahl's pivot joint would make the crevice tool nearly inoperable, or at least, frustrating to operate, as it would flop around in every direction during use.

- (2) Neither Ragner nor Dahl could not anticipate these requirements without first realizing that the pivot joint must be operable in both directions of the pivot body for the tools attached their. There is no other known example of a pivot joint designed to provide operation in both directions for tools on each end. Thus, Dahl cannot be logically combined with Ragner to create an effective multi-function tool without significant modifications to the pivot joint to allow it to operate with tools in both directions, which is not shown in any prior art.

The suggestion to combine the references should come from the prior art, rather than from the Applicant(s). As was forcefully stated in *Orthopedic Equipment Co. Inc. v. United States*, 217 U.S.P.Q. 193, 199 (CAFC 1983):

"It is wrong to use the patent in suit [here the patent application] as a guide through the maze of prior art references, combining the right references in the right way to achieve the results of the claims in suit [here the claims at issue]. Monday morning quarterbacking is quite improper when resolving the question of nonobviousness in a court of law [here the PTO]."

7. The Rejection Of Dependent Claim 10 from combining of Dahl (2,170,963) and Ragner (5,502,870) is overcome.

The O.A. rejected independent Claims 10 with the combination of Dahl and Ragner. Claim 10 is now dependent on a rewritten independent Claim 1 which is proposed to be allowable. The Applicant(s) request reconsideration of this rejection, in light of these changes to Claim 1, and for the following reasons:

- 1) Dahl shows a pivot joint that pivots between multiple positions, but does not have two hose wand ports like the Applicants to determine even if it provides the claimed acute and obtuse angles between the hose wand ports. Thus, Dahl cannot be directly applied to Claim 10 as such.

However, if one assumes that the axis of the suction port 15 defines a second hose wand port (contrived by the Examiner not by prior art), directed vertically down in Figs. 2, 3, 5 and 6, and defines the axis for port 15, then a means of measuring the angle of operation between the two ends of Dahl's pivot nozzle can be determined.

1) If one defines suction port 15 as stated above with a second hose wand port, Dahl would still only teach a pivot joint that pivots between an obtuse angle and approximately a 90 degree angle, when measured from the axis of its cleaning brush 23 and suction port 15, and the axis of hose wand port 11. In order to form an acute angle, the pivot joint would need to pivot to an angle less than 90 degrees from each other (by definition of acute). Dahl however, only shows rotation to 90 degrees which is not acute.

8. The O.A. rejection of Dependent Claims 2 through 12 are overcome.

With the allowance of Claim 1, dependent Claims 2 through 13 become allowable by being dependent on allowed Independent Claim 1.

9. NEW Independent Claim 14 is a reworded version of Claim 1.

10. NEW Dependent Claims 15 through 20 rely on Claim 14, which is presented to be in allowance, and therefore are also in allowance.

REQUEST FOR CONSTRUCTIVE ASSISTANCE

11. The undersigned has/have made a diligent effort to amend the claims of this application so that they define novel structure and are submitted to render the claimed structure unobvious because it produces new and unexpected results and because no prior-art can logically be combined to produce these results without the benefit of the Applicants' technology. If for any reason the claims of this application are not believed to be in full condition for allowance, the Applicant(s) respectfully requests the constructive assistance and suggestions of the Examiner in drafting one or more acceptable claims pursuant to MPEP 707.07(j) or in making constructive suggestions pursuant to MPEP 706.03(d) in order that this application can be placed in allowable condition as soon as possible and without the need for further proceedings.

very respectfully,



Gary Ragner
Applicant Pro Se

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